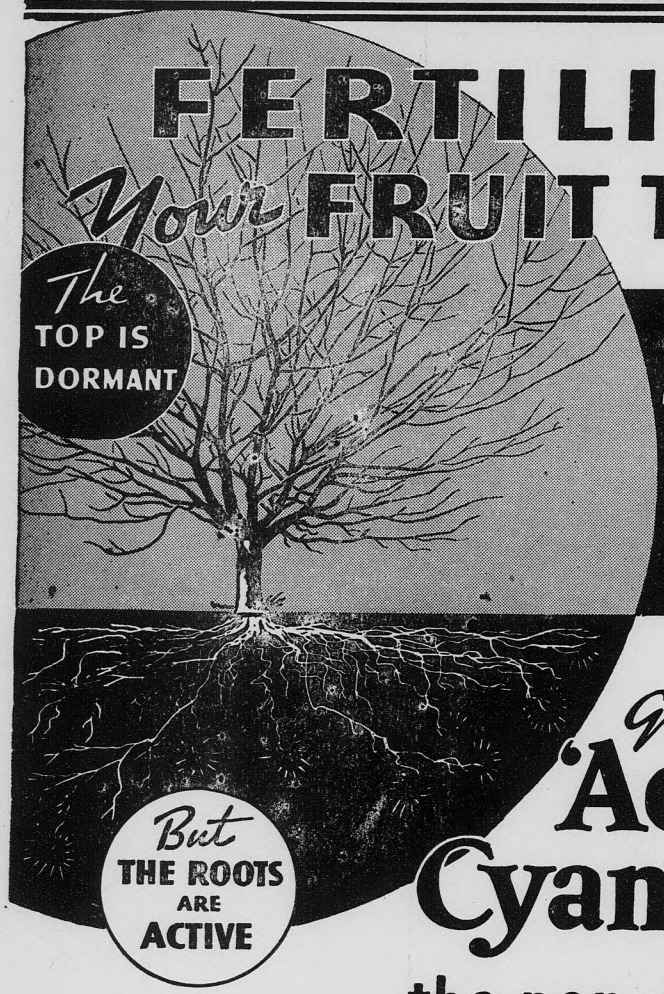
The Maryland Fruit Grower

October, 1936

Maryland State
Horticultural Society

FERTILIZE Your FRUIT TREES this Fall



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The Maryland Fruit Grower

Published Monthly by the Maryland State Horticultural Society

Edited by the Secretary, A. F. Vierheller, Extension Horticulturist

Vol. 6 **October, 1936** **No. 10**

FALL APPLICATIONS OF FERTILIZERS TO FRUIT TREES IN MARYLAND

By A. Lee Schrader

Head of Department of Horticulture, University of Maryland

Fall application of nitrogen to fruit trees has been shown by experimental evidence in Maryland and elsewhere to have very distinct advantages over spring applications and hence more and more growers are making applications of nitrogen to their trees in the fall.

Some of the questions which arise in the minds of the growers are: time of application, amount of application, and material to apply. The question of the benefits to be derived from the application in the fall has not been raised since enough evidence has been accumulated to convince the grower that fall application is an accepted practice.

The experimental evidence has been accumulating for the past fifteen years to reach this point where the grower can confidently make use of fall applications. It is well known that the nitrogen applied in the fall is taken up by the tree during the fall and winter, and is stored in the large roots. When growth starts in the spring this nitrogen moves from the large roots to the various growing points of the tree and apparently is available for tree growth at a more timely stage than that attained by spring applications.

We may look back into the practice of fruit growers many years ago and find that manure was available for application to the orchard and the application of manure was usually made in the fall of the year. This constitutes, in effect, additional evidence that fall application of fertilizers is of decided benefit to fruit trees since the experience of growers apparently led to this practice in former years.

In regard to the benefits which we ascribe to fall applications, one of the principal benefits is the better maturity and earlier coloring of the fruits as a result of the earlier maturity of tree growth. Spring applications, on the other hand, tend to delay maturity of the current season's growth and hence affect the development of color. More slowly available nitrogen materials have shown this delayed maturity in a more pronounced manner than quickly available materials. However, all nitrogen materials are recognized as having an effect delaying maturity one or two weeks. Thus, if fall applications will aid maturity and particularly coloring, this benefit is quite obviously of practical importance.

Another benefit which is ascribed to fall fertilization is the correction of the biennial bearing habit but sufficient evidence is not accumulated to definitely ascribe any benefit to fall application in correcting biennial bearing.

This review of the problem of fall application of nitrogen was considered especially to answer growers' questions about time, amount, and material for application. The time of application for both peaches and apples in Maryland, may extend from September 15th to November 15th. In the experimental work in Maryland, applications have been made from September 15th to October 15th, but it is reasonable to believe that as late as November 15th

could be considered for fall applications. Experimental work is in progress at the present time with several materials to determine the effectiveness of late applications in the fall.

In regard to the possibility that a grower might not have time to make nitrogen applications before November 15th, and still wants to apply fall nitrogen, it is advisable that he use a form of nitrogen which is not easily leached. Considering the various materials which are on the market, including sodium nitrate, ammonium sulphate, cyanamid, and calcium nitrate, the choice of material can be determined both by prices and by the experimental evidence on the response of trees to these materials.

On the light, sandy soils where leaching might occur it is advisable to use the more slowly available materials such as ammonium sulphate or cyanamid. There is not much evidence on the use of cyanamid under such conditions but it is assumed that it will react similarly to ammonium sulphate. Generally speaking, if trees are growing well and the soil is not of a light, sandy nature, all the nitrogen materials will be equally effective in maintaining the nitrogen needs of the tree. Under such conditions, price would be the main consideration, except for some of the preferences the growers might have as to the handling qualities of the several materials. Calcium nitrate has a disadvantage in handling in that it takes up moisture and workmen find it rather disagreeable to apply by hand. Ammonium sulphate in the form usually available is rather difficult to spread evenly in windy weather.

In regard to the amounts of these materials to use per tree, the condition of the tree and the response which a grower has obtained in the past will determine very largely the amounts to use per tree. Amounts up to eight to ten pounds per bearing tree have given profitable responses in Maryland orchards. The quantity of eight or ten pounds refers to the actual quantity of any material and is not the amount of actual nitrogen applied. Thus eight pounds of sodium nitrate per tree on an apple orchard in full bearing would be applied per tree, if this quantity is necessary to get the desired response.

The difference in percent of nitrogen among the several materials may raise a question in the minds of some growers. The materials including sodium nitrate and calcium nitrate approximate sixteen percent nitrogen, whereas ammonium sulphate and cyanamid approximate twenty to twenty-one percent nitrogen, which gives a ratio of four pounds of the first two materials equal to three pounds of the latter two materials.

Some of the best results in tree growth and yield have been obtained by splitting the application of nitrogen so that one-half or more of the application would be made in the fall and the rest of the material applied in the early spring. If a grower follows this practice, especially where the larger amounts of nitrogen per tree are involved, it is advisable to use a quickly available nitrogen such as sodium nitrate for the spring application. This is especially important for peach trees when spring application is delayed until the fruit grower knows definitely what his crop prospects may be. Many growers wait until the frost hazard has passed before completing the full amount of nitrogen application. If no crop is in prospect, this late spring application then can be omitted.

With apple orchards in sod, a spring application of a complete fertilizer or a fertilizer containing nitrogen and phosphorus seems to be very desirable for Maryland conditions. This application should be made on the sod area of the orchard rather than on a tree basis. Many of the Maryland orchards

in sod do not show satisfactory growth of the sod whether it be grass or legume, and it is highly desirable that a good growth of sod be promoted, which can be mowed at intervals during the summer to furnish a mulch over the ground.

In case a grower makes a fall application of nitrogen to his apple trees, he may wish to reduce this application if he intends to fertilize the sod the following spring. If a fall cover crop is sown, application of a complete fertilizer to aid the growth of the cover crop is quite essential. The nitrogen contained in this fertilizer will be of considerable benefit in fertilizing the tree as well as the cover crop. However, the amount of nitrogen applied per tree usually is not sufficient to take care of the needs of the tree. Hence, additional nitrogen should be applied for the tree according to the usual method of hand application.

Lime should be applied to orchards, as determined by soil acidity tests, to aid in growth of sod and cover crops, as well as to help nitrification. Some nitrogen, materials are not as effective on acid soil.

In the fall of the year the foliage conditions of the tree, as well as the amount of terminal growth and spur growth, serve as a good index of the nitrogen needs of the tree. Poor, yellow, or light green foliage in the fall is a good indication of nitrogen need. Such trees should receive adequate nitrogen fertilizers.

This discussion has omitted much detail as to the experimental evidence but our own growers are urged to follow the results published from Maryland and other states as to fertilizer experiments to keep up to date if the details are desired.

NATIONAL APPLE WEEK

In line with the various advertising groups, National Apple Week is to be revived this year, and made into more than a name. The International Apple Association is working actively in interesting railroads and steamship lines to feature special apple recipes in their dining service, and the response has been excellent. National Apple Week is Saturday, October 31 to Friday, November 6, inclusive. What can the growers do? It seems that a few minutes spent with various grocers, hardware merchants, seed dealers or any other merchants that the growers know, might interest these merchants in giving window space to an apple exhibit, during Apple Week. One or several growers might go together in getting up enough fruit for a basket and plate exhibit, to fill a show window nicely. We can get some posters from Appalachian Apples, and make an effective display. Every town of any size, in Maryland should have an Apple Week exhibit. It may take a little time, but the growers in the various sections will probably find that it is good business to boost their product through their own efforts. Let's be able to report to International Apple Association that Maryland growers put on some real fruit displays during Apple Week, for the Association is going to ask for just such a report.

WINTER MEETING

No definite plans have been made for the winter meeting, but the probable dates are January 5, 6, and 7. The place of meeting will be selected by the Executive Committee, and Hagerstown may be favored, in view of last year's fine attendance. Definite announcement will be made in November.

FALL CARE OF THE SPRAYER

Growers who feel that they clean their sprayers thoroughly, will be interested in the fall cleaning that is recommended in August, 1936 "Virginia Fruit". Here it is: Wash out the hose, pump and tank, jarring loose any caked material inside the tank. Scrub the outside of the tank. Remove all drain plugs. Clean the wire strainers with a wire brush and kerosene. Disconnect hose, close cut-off valves and run new or used cylinder oil through the pump, allowing oil to remain in the pump, all winter. Place valve seats and balls in oil for the winter. Paint all metal parts of the sprayer with oil, and the tank or wooden parts with paint or linseed oil. Clean wheels with a wire brush, and plaint them to prevent rust or corrosion. Drain the hose, and hang it up so that it won't crease and crack. Oil the threads on the hose connections. Remove spray disks, and place them in oil, and oil the spray rods inside and out. Check and replace all worn parts, or order replacement parts for those that appear to be weak. Tighten up all bolts on the outfit.

APPLE CROP REPORT

The Maryland Crop Report released October 12, reports a *total* 1936 apple crop prospect of 1,633,000 bushels for Maryland, as compared with 1,740,000 bushels predicted in the September report. Maryland's *commercial* crop is predicted at 1,072,000 bushels. Worm injury, and the hurricane which blew off almost half of the Eastern Shore crop, are given as reasons for the decline. The U. S. Crop Report of October 9, reported 1% decline in *total* apple crop under that reported in September, due to worm and wind damage. Commercial crop prospects showed decline in Illinois, Delaware, Maryland, Virginia, West Virginia, Idaho, and Washington, but improved conditions in Massachussetss, New Jersey, Pennsylvania, Michigan, Oregon, and California. The total 1935 *commercial* apple crop was estimated at 93,866,000 bushels; that of 1936, 65,508,000 bushels, the 5 year average being 97,895,000 bushels. Commercial crop includes apples used for fresh consumption.

THOUGHTS

Our advertisers help to keep this paper going. They merit your business. Soon, the orchard supply men will be in the field, soliciting your orders. Tell them about the Maryland Fruit Grower. We need more advertising, so that we can issue a bigger paper. Every grower can help by reminding the commercial fellows that we want their patronage.

MOUSE CONTROL

A special mimeograph on Mouse control is enclosed with this issue of the Grower. Read it carefully. Mouse injury is not to be neglected. Many fine trees have been destroyed in Maryland orchards, by this pest.

APPLE POMACE FOR LIVE STOCK

Ohio Bi-monthly Bulletin, Vol. 20, No. 175 states that apple pomace has nearly as much feeding value as corn silage. The pomace has been ensiled along with, and above and below corn silage in a silo, and the results have been good. It is recommended to be fed at the rate of 20 to 30 pounds daily, along with a suitable grain and hay ration. Its cash value as silage, is about 1/5 that of corn silage.

BULLETIN REVIEW

VARIETAL SUITABILITY OF PEACHES FOR PRESERVE MAKING AND FACTORS AFFECTING THE QUALITY OF THE PRODUCT

By H. H. Moon, C. W. Culpepper, and Joseph S. Caldwell, U. S. D. A. Circular No. 375.

The results of an experimental study of peach varieties for their suitability to preserve making are presented in this bulletin. The work included about 40 freestone, 20 clingstone and a few intermediate varieties. The finished products were individually graded for flavor, texture, color, consistency and degree of disintegration of the fruit.

It was found that as a group the clingstone varieties made preserves having clearer, more attractive color, less disintegration, firmer texture, a thinner consistency and a less pronounced and distinctive flavor than did the freestone varieties. Within each group there were also very considerable differences between varieties.

Considering all factors Early Elberta, Ideal, Paragon and Tuskena were considered slightly superior, closely followed among others by Motion Cling, Fosters, Golden Queen, Kalamazoo, Late Elberta and Orange, Sellers, Peakes and Phillips Clings. Products entirely satisfactory but not quite equal to these, were yielded, among others by Augbert, Brackett, Engle, Elberta, Slappey, Late Crawford and Rochester.

The quality also varied greatly with the stage of maturity of the fruit. With all varieties there was a progressive improvement in flavor and color with advancing maturity. For preserve making it was concluded that the best stage of maturity for freestone varieties was two or three days past shipping ripeness and for clingstone varieties, four or five days past this condition.—Reviewed by I. C. Haut.

That horrid conductor glared at me as if I hadn't paid my fare.
And what did you do?
I just glared back at him as if I had.

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